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Attorney Docket No: MCS-023-01

### REMARKS

In response to the Office Action dated October 29, 2003, the following arguments are presented. Claims 1, 4-29 and 31 remain in the case. In light of the arguments set forth in this response, reexamination and reconsideration of the application are requested.

#### Section 103(a) Rejections

The Office Action rejected claims 1, 4-29 and 31 under 35 U.S.C. § 103(a) as being unpatentable over Jagielski in a paper entitled, "An Application of Neural Networks to Emulation of Aesthetic Judgments" in view of a Yasuda et al. in a paper entitled "Application of Neural Network to Aesthetic Design of Bridges". The Office Action contended that Jagielski discloses all elements of the Applicant's claimed invention except for explicitly disclosing the "generation of a recommendation to improve the aesthetic score." However, the Office Action stated that Yasuda et al. "teaches of generating a recommendation to improve an aesthetic score for the image by evaluating the end results and compiling a recommendation that can be applied to a design to improve the projects (see sections 5-6 on pages 540-541, especially section 6 on page 541)." Therefore, the Office Action asserted that it would have been obvious to one of ordinary skill in the art to combine the teachings of Jagielski and Yasuda et al. arrive at the Applicant's claimed invention.

In response, the Applicant respectfully traverses these rejections based on the following legal and technical analysis. The Applicant submits that the combination of Jagielski and Yasuda et al. is lacking at least one element of the Applicant's claimed invention. In particular, the combination of Jagielski and Yasuda et al. does not disclose, either explicitly or implicitly, the material claimed feature of generating a recommendation to improve the aesthetic score for the image.

Further, the combination of Jagielski and Yasuda et al. fails to appreciate the advantages of this claimed feature. In addition, there is no technical suggestion or motivation disclosed in either Jagielski or Yasuda et al. to define this claimed feature.

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Thus, the Applicant submits that the combination of Jagielski and Yasuda et al. cannot make obvious the Applicant's claimed feature of generating a recommendation to improve the aesthetic score for the image.

To make a prima facie showing of obviousness, all of the claimed features of an Applicant's invention must be considered, especially when they are missing from the prior art. If a claimed feature is not disclosed in the prior art and has advantages not appreciated by the prior art, then no prima facie showing of obviousness has been made. The Federal Circuit Court has held that it was an error not to distinguish claims over a combination of prior art references where a material limitation in the claimed system and its purpose was not taught therein. *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988). Moreover, as stated in the MPEP, if a prior art reference does not disclose, suggest or provide any motivation for at least one claimed feature of an Applicant's invention, then a prima facie case of obviousness has not been established (MPEP § 2142).

Independent Claims 1, 9, 13, 19, 22 and 25

Independent claim 1 of the Applicant's claimed invention includes a computer-implemented method. The method includes inputting a training set including a plurality of images and a corresponding plurality of aesthetic scores for the images, training a classifier to provide aesthetic scores based on the training set, and generating an aesthetic score for an image based on the classifier. The method further includes generating a recommendation to improve the aesthetic score for the image.

Recommending improvements to the aesthetic score includes "suggestions as to how the image's score could be improved by manipulating visual elements in the image" (specification, page 14, lines 9-12). The recommendations "may suggest that particular colors be used, or that certain geometrical elements be removed, in order to improve the image's aesthetic score" (specification, page 14, lines 12-14). The recommendations may be generated using some type of optimization strategy.

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In contrast, Jagielski merely teach a system that takes black-and-white abstract art images and its aesthetic value parameter and inputs them into a neural network (p. 336, left column, 2<sup>nd</sup> paragraph, lines 1-3). The system of Jagielski then classifies the black-and-white abstract art images, displaying aesthetic preferences similar to its teachers (Abstract, lines 5-8). However, nowhere does Jagielski discuss the Applicant's claimed feature of generating a recommendation to improve the aesthetic score for the image.

Yasuda et al. add nothing to the cited combination that would render the Applicant's claimed invention obvious. Yasuda et al. merely teach improving a neural network's ability to distinguish what bridges have high aesthetic value. In other words, Yasuda et al. teach how the performance of a neural network regarding identifying aesthetics value of bridges can be improved.

The Office Action states that sections 5 and 6 of Yasuda et al. teach "generating a recommendation to improve an aesthetic score for the image." The Applicant respectfully disagrees. The only improvement discussed in Yasuda et al. is that "the method can be improved to be more practical by using a refined neural network and combining it with an expert system" (page 541, first paragraph of Section 6; emphasis added). This method "attempts to quantify and assess the landscape design" by improving the neural network's performance (page 534, Abstract). For example, one way the performance (and thus the ability of the neural network to distinguish bridges having aesthetic value) is by "combining it [the neural network] with an expert system (page 541, first paragraph of Section 6). In Yasuda et al., the distinguishing ability of a neural network is being improved, not recommendations to improve the aesthetic score.

In summary, the Applicant asserts that Yasuda et al. fail to suggest using their system to generate recommendations that would improve the aesthetic score of an image. Yasuda et al. merely disclose improving a neural network's ability to distinguish

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what has high aesthetic value. This is different from the Applicant's claimed feature of generating a recommendation to improve the aesthetic score of an image being examined. Nowhere do Yasuda et al. teach that recommendations be generated, for example, which suggests "that particular colors be used, or that certain geometrical elements be removed, in order to improve the image's aesthetic score" (specification, page 14, lines 13-14).

Absent this teaching, motivation or suggestion, the combination of Jagielski and Yasuda et al. cannot render the Applicant's claimed invention obvious (MPEP § 2143.01).

The combination of Jagielski and Yasuda et al. also fails to appreciate or recognize the advantages of the Applicant's claimed feature of generating a recommendation to improve the aesthetic score for the image. More specifically, using this feature "allows end users to have access to professional judgment as to how 'good' their created images 'look'" (specification, page 3, lines 4-6). The combination of Jagielski and Yasuda et al. simply does not discuss or appreciate these advantages of the Applicant's claimed feature of generating a recommendation to improve the aesthetic score for the image.

The Applicant, therefore, submits that obviousness cannot be established since the combination of Jagielski and Yasuda et al. does not teach, disclose, suggest or provide any motivation for the Applicant's claimed feature of generating a recommendation to improve the aesthetic score for the image. In addition to explicitly lacking this feature, the combination of Jagielski and Yasuda et al. also fails to implicitly disclose, suggest, or provide motivation for this feature. In particular, the combination of Jagielski and Yasuda et al. lacks any suggestion and fails to provide any motivation for Applicant's claimed feature. Further, the combination of Jagielski and Yasuda et al. fails to appreciate advantages of this claimed feature.

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Therefore, as set forth in *In re Fine* and MPEP § 2142, Jagielski and Yasuda et al., either alone or in combination, do not render the Applicant's claimed invention obvious because the references are missing at least one material feature of the Applicant's claimed invention. Consequently, because a prima facie case of obviousness cannot be established due to the lack of "some teaching, suggestion, or incentive supporting the combination", the rejection must be withdrawn. ACS Hospital Systems, Inc. v. Montefiore Hospital, 732 F.2d 1572, 1577, 221 USPQ 929, 933 (Fed. Cir. 1984); MPEP 2143.01.

Accordingly, the Applicant respectfully submits that independent claim 1 is patentable under 35 U.S.C. § 103(a) over Jagielski in view of Yasuda et al. based on the legal and technical arguments set forth above and below. Independent claims 9, 13, 19, 22 and 25 also contain this patentable feature of generating a recommendation to improve the aesthetic score for the image. Thus, these independent claims are also nonobvious over Jagielski in view of Yasuda et al..

Moreover, claims 4-8 and 31 depend from independent claim 1, claims 9-12 depend from independent claim 9, claims 14-18 depend from independent claim 13, claims 20-21 depend from independent claim 19, claims 23 and 24 depend from independent claim 22, and claims 26-29 depend from independent claim 25 and are also nonobvious over Jagielski in view of Yasuda et al. (MPEP § 2143.03). The Applicant, therefore, respectfully requests reexamination, reconsideration and withdrawal of the rejection of claims 1, 4-29 and 31.

### Conclusion

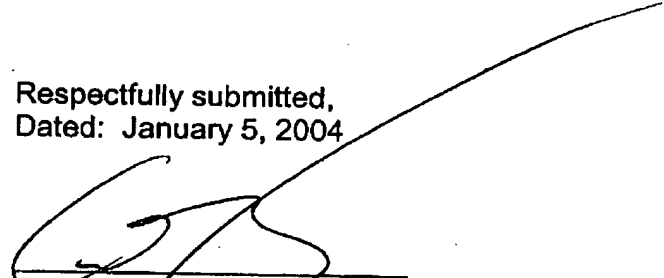
In view of the arguments set forth above, the Applicant submits that claims 1, 4-29 and 31 of the subject application are in immediate condition for allowance. The Examiner is respectfully requested to withdraw the outstanding rejections of these claims and to pass this application to issue.

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In an effort to expedite and further the prosecution of the subject application, the Applicant kindly invites the Examiner to telephone the Applicant's attorney at (805) 278-8855 if the Examiner has any comments, questions or concerns, wishes to discuss any aspect of the prosecution of this application, or desires any degree of clarification of this response.

Respectfully submitted,  
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